

**Abstract**

Nonvolatile two-transistor semiconductor memory cell and associated fabrication methods

The invention relates to a nonvolatile two-transistor semiconductor memory cell and an associated fabrication method, source and drain regions (2) for a selection transistor (AT) and a memory transistor (ST) being formed in a substrate (1). The memory transistor (ST) has a first insulation layer (3), a charge storage layer (4), a second insulation layer (5) and a memory transistor control layer (6), while the selection transistor (AT) has a first insulation layer (3') and a selection transistor control layer (4\*). By using different materials for the charge storage layer (4) and the selection transistor control layer (4\*), it is possible to significantly improve the charge retention properties of the memory cell by adapting the substrate doping with electrical properties remaining the same.

Figure 2